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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/572,831

03/22/2006

Yusuke Konagai

YAMA:120

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EXAMINER

PAUL, DISLER

ART UNIT

PAPER NUMBER

2614

MAIL DATE

DELIVERY MODE

01/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/572,831	Applicant(s) KONAGAI ET AL.	
	Examiner DISLER PAUL	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,6,7 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6 and 7 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The applicant's amended claim wherein "having a characteristic correction control device that changes the directivity of the array speaker while the sound pickup device is picking up sound so that the sound pickup device picks up sound reflected off of different areas of the wall surface or the sound reflection board" as filed on 6/6/08 has been further analyzed and rejected in view of Hooley et al. (GB 0301093.1).

Pertinent Prior art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hooley et al. (US 2006/0153391) also disclose of the "having a characteristic correction control device that changes the directivity of the array speaker while the sound pickup device is picking up sound so that the sound pickup device picks up sound reflected off of different areas of the wall surface or the sound reflection board.

1. *

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akio (US 6,111,962) and Yoshino et al. (US 7,054,448 B2) and Hooley et al. (GB 0301093.1).

Re claim 1, Akio disclose of the audio characteristic correction system for an audio surround system, including an array that reflects sound off a wall surface or a sound reflection board to create a virtual surround, for correcting for audio characteristics of the wall

Art Unit: 2614

surface or the sound reflection board, (fig.5-7; col.7 line 30-37; col.7 line 40-55 & col.8 line 1-19/correction is implemented to created virtual walls sound by all the speakers), the audio characteristic correction system comprising: a sound pick up device for picking up sound from the array speaker that has been reflected off the wall surface or the sound reflection board (fig.5-9, col.7 line 32-55); and a character for correction device for correcting, based on the sound picked up by the sound pickup device, being the gain of an audio signal input to the array speaker such that the sound reflected off the wall surface or the sound reflection board has desired audio characteristics at a desired listening position (fig.8, col.8 line 60-67 & fig.3 (21-28)).

However, Akio fail to disclose of the audio characteristic correction including at least one of the frequency-gain or frequency-phases, But, Yoshino et al. disclose of a system wherein the audio characteristic correction including at least one of the frequency-gain or frequency-phases (fig.3-5; col.7 line 25-67) for the purpose of creating high quality sound field space in consideration of the acoustic condition and space of the audio system. Thus, taking the combined teaching of Akio and now Yoshino et al. as a whole, it would have been obvious for one of the ordinary skill in the art at the time of the invention to have incorporated the audio characteristic correction including at least one of the frequency-gain or frequency-

Art Unit: 2614

phases for the purpose of creating high quality sound field space in consideration of the acoustic condition and space of the audio system.

While, the combined teaching of Akio and now Yoshino et al. as a whole, disclose of the above with speakers at plurality of locations for outputting sounds. But, they fail to disclose of the specific wherein having the control device that changes the directivity of the array speaker while the sound pickup device is picking up sound so that the sound pickup device picks up sound reflected off of different areas of the wall surface or the sound reflection board. But, Hooley et al. disclose of a system wherein having a control device that changes the directivity of the array speaker while the sound pickup device is picking up sound so that the sound pickup device picks up sound at different area of the enclosure and including reflected off of different areas of the wall surface or the sound reflection board (fig.1,3-4; page 13 line 27-35; page 14 line 1-25/speaker response with directivity control of the array speaker as with beam to direct sound in different area and microphone to pick up sound). Thus, taking the combined teaching of the combined teaching of Akio and Yoshino et al. and Hooley et al. as a whole, it would have been obvious for one of the ordinary skill in the art to have modify the combined teaching of Akio and now Yoshino et al. as a whole, having a control device that changes the directivity of the array speaker while the sound pickup device is picking up sound so that the sound pickup device picks up sound at different area of the enclosure and including

Art Unit: 2614

reflected off of different areas of the wall surface or the sound reflection board for the purpose of obtaining optimal steering sound in all area in the room.

Re claim 2, Akio disclose of the audio characteristic correction system for an audio surround system, including an array speaker that reflect sound off a wall or a sound reflection board so as to create a virtual surround speaker, for correcting for audio characteristics of the wall surface or the sound reflection board (fig.6-7; col.7 line 30-37, col.7 line 40-55 & col.8 line 1-19/correction is implemented to created virtual wall reverberation), the audio characteristic correction system comprising: a measurement means for measuring audio characteristics of the sound reflected on the wall surface or the sound reflection board (fig.3-5 wt col.7 line 50-54 & 35-40/microphone to take in measurement); and a characteristic correction means for correcting, based on the audio characteristics measured by the measurement means the gain of an audio signal input to the array speaker such that the sound reflected off the wall surface or the sound reflection board has desired audio characteristics at a desired listening position (col.8 line 45-67 & fig.3 (21-28), fig.9).

However, Akio fail to disclose of the audio characteristic correction including at least one of the frequency-gain or frequency-phases, But, Yoshino et al. disclose of a system wherein the audio

Art Unit: 2614

characteristic correction including at least one of the frequency-gain or frequency-phases (fig.3-5; col.7 line 25-67) for the purpose of creating high quality sound field space in consideration of the acoustic condition and space of the audio system. Thus, taking the combined teaching of Akio and now Yoshino et al. as a whole, it would have been obvious for one of the ordinary skill in the art at the time of the invention to have incorporated the audio characteristic correction including at least one of the frequency-gain or frequency-phases for the purpose of creating high quality sound field space in consideration of the acoustic condition and space of the audio system.

While, the combined teaching of Akio and now Yoshino et al. as a whole, disclose of the above with speakers at plurality of locations for outputting sounds. But, they fail to disclose of the specific wherein having the control device that changes the directivity of the array speaker while the sound pickup device is picking up sound so that the sound pickup device picks up sound reflected off of different areas of the wall surface or the sound reflection board. But, Hooley et al. disclose of a system wherein having a control device that changes the directivity of the array speaker while the sound pickup device is picking up sound so that the sound pickup device picks up sound at different area of the enclosure and thus inherently including reflected off of different areas of the wall surface or the sound reflection board (fig.1,3-4; page 13 line 27-35; page 14 line 1-25/speaker response with directivity control of the array speaker as

Art Unit: 2614

with beam to direct sound in different area and microphone to pick up sound). Thus, taking the combined teaching of the combined teaching of Akio and Yoshino et al. and Hooley as a whole, it would have been obvious for one of the ordinary skill in the art to have modify the combined teaching of Akio and now Yoshino et al. as a whole, having a control device that changes the directivity of the array speaker while the sound pickup device is picking up sound so that the sound pickup device picks up sound at different area of the enclosure and including reflected off of different areas of the wall surface or the sound reflection board for the purpose of obtaining optimal steering sound in all area in the room.

Re claim 3, the audio characteristic correction system according to claim 2 further comprising a control means for setting at least one of the frequency-gain characteristics, or frequency-phase characteristics of the audio signal input to the array speaker for the characteristic correction means (Yoshino, fig.3-5/equalizing).

Re claim 6, the audio characteristic correction system according to claim 1, wherein the array speaker includes a delay circuit, a plurality of speakers arranged in an array, a plurality of gain adjustment circuits, each for one the speakers, and a plurality of amplifiers, each for one of the speakers, contained in a same housing (fig.3-4; col.6 line 45 & col.7 line 8/ with each speaker).

Re claim 7, the audio characteristic correction system according to claim 2, wherein the array speaker includes a delay circuit, a plurality of speakers arranged in an array, a plurality of gain adjustment circuits, each for one the speakers, and a plurality of amplifiers, each for one of the speakers, contained in a same housing (fig.3-4; col.6 line 45 & col.7 line 8/with each speaker).

Allowable Subject Matter

2. Claim12 is objected to as being dependent upon a rejected base claim, *but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.*

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Disler Paul whose telephone number is 571-270-1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2614

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. P./

Examiner, Art Unit 2614

/Vivian Chin/

Supervisory Patent Examiner, Art Unit 2614

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DISLER PAUL whose telephone number is (571)270-1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Application/Control Number: 10/572,831
Art Unit: 2614

Page 12

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Examiner, Art Unit 2614